

2SD1275, 2SD1275A

Silicon NPN Triple-Diffused Planar Darlington Type

Power Amplifier
Complementary Pair with 2SB949, 2SB949A

■ Features

- High DC current gain (h_{FE})
- High speed switching
- "Full Pack" package for simplified mounting on a heat sink with one screw

■ Absolute Maximum Ratings ($T_c=25^\circ\text{C}$)

| Item | Symbol | Value | Unit |
|-----------------------------|------------------------|------------|------------------|
| Collector-base voltage | 2SD1275 | 60 | V |
| | 2SD1275A | 80 | |
| Collector-emitter voltage | 2SD1275 | 60 | V |
| | 2SD1275A | 80 | |
| Emitter-base voltage | V_{EB0} | 5 | V |
| Peak collector current | I_{CP} | 4 | A |
| Collector current | I_C | 2 | A |
| Collector power dissipation | $T_c=25^\circ\text{C}$ | 35 | W |
| | $T_a=25^\circ\text{C}$ | 2 | |
| Junction temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 ~ +150 | $^\circ\text{C}$ |

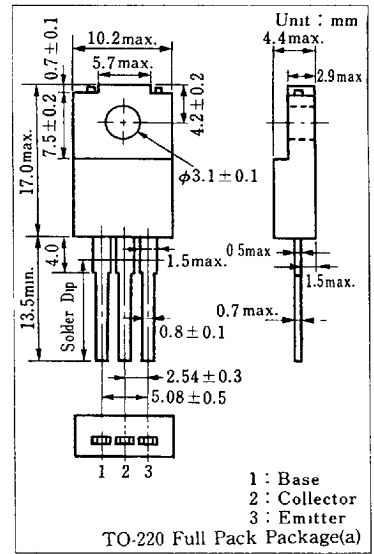
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

| Item | Symbol | Condition | min. | typ. | max. | Unit |
|--------------------------------------|---------------|---|------|-------|------|---------------|
| Collector cutoff current | 2SD1275 | $V_{CB}=60\text{V}, I_E=0$ | | | 1 | mA |
| | 2SD1275A | $V_{CB}=80\text{V}, I_F=0$ | | | 1 | |
| Collector cutoff current | 2SD1275 | $V_{CL}=30\text{V}, I_B=0$ | | | 2 | mA |
| | 2SD1275A | $V_{CE}=40\text{V}, I_B=0$ | | | 2 | |
| Emitter cutoff current | I_{FB0} | $V_{EB}=5\text{V}, I_C=0$ | | | 2 | mA |
| Collector-emitter voltage | 2SD1275 | $I_C=30\text{mA}, I_B=0$ | 60 | | | V |
| | 2SD1275A | | 80 | | | |
| DC current gain | h_{FE1} | $V_{CE}=4\text{V}, I_C=1\text{A}$ | 1000 | | | |
| | h_{FE2}^* | $V_{CL}=4\text{V}, I_C=2\text{A}$ | 1000 | 10000 | | |
| Base-emitter voltage | V_{BE} | $V_{CL}=4\text{V}, I_C=2\text{A}$ | | | 2.8 | V |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=2\text{A}, I_B=8\text{mA}$ | | | 2.5 | V |
| Transition frequency | f_T | $V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1\text{MHz}$ | | 20 | | MHz |
| Turn-on time | t_{on} | $I_C=2\text{A}, I_{B1}=8\text{mA}, I_{B2}=-8\text{mA}$ $V_{CC}=50\text{V}$ | | 0.5 | | μs |
| Storage time | t_{str} | | | 4 | | μs |
| Fall time | t_f | | | 1 | | μs |

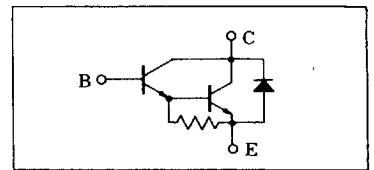
* h_{FE2} Classifications

| Class | R | Q | P |
|-----------|-------------|-------------|--------------|
| h_{FE2} | 1000 ~ 2500 | 2000 ~ 5000 | 4000 ~ 10000 |

■ Package Dimensions



■ Inner Circuit



■ 6932852 0016680 T26 ■

